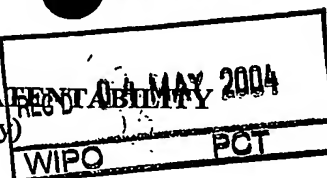


## PATENT COOPERATION TREATY

9/505293

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY  
(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

|   |  |   |   |
|---|--|---|---|
| Applicant's or agent's file reference<br><b>P14286WO</b>  |  | <b>FOR FURTHER ACTION</b> See Form PCT/IPEA/416                                     |   |
| International application No.<br><b>PCT/SE 2003/000160</b>  |  | International filing date (day/month/year)<br><b>30-01-2003</b>                     | Priority date (day/month/year)<br><b>25-02-2002</b> |
| International Patent Classification (IPC) or national classification and IPC<br><b>H04L 12/56, H04L 12/66, H04L 29/06, H04Q 7/22</b>  |  |   |   |
| Applicant<br><b>Telefonaktiebolaget L M Ericsson (publ) et al</b>   |  |   |   |
| <p>1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of <u>4</u> sheets, including this cover sheet.</p> <p>3. This report is also accompanied by ANNEXES, comprising:</p> <p>a. <input checked="" type="checkbox"/> (sent to the applicant and to the International Bureau) a total of <u>5</u> sheets, as follows:</p> <p><input checked="" type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).</p> <p><input type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.</p> <p>b. <input type="checkbox"/> (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s)) _____, containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).</p> |  |   |   |
| <p>4. This report contains indications relating to the following items:</p> <p><input checked="" type="checkbox"/> Box No. I Basis of the report</p> <p><input type="checkbox"/> Box No. II Priority</p> <p><input type="checkbox"/> Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</p> <p><input type="checkbox"/> Box No. IV Lack of unity of invention</p> <p><input checked="" type="checkbox"/> Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</p> <p><input type="checkbox"/> Box No. VI Certain documents cited</p> <p><input type="checkbox"/> Box No. VII Certain defects in the international application</p> <p><input type="checkbox"/> Box No. VIII Certain observations on the international application</p>   |  |   |   |
| Date of submission of the demand<br><b>10-09-2003</b>   |  | Date of completion of this report<br><b>27-04-2004</b>                              |   |
| Name and mailing address of the IPEA/SE<br>Patent- och registreringsverket<br>Box 5055<br>S-102 42 STOCKHOLM<br>Facsimile No. +46 8 667 72 88   |  | Authorized officer<br><br><b>Anders Edlund /LR</b><br>Telephone No. +46 8 782 25 00 |   |

## Box No. I Basis of the report

1. With regard to the language, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.

- ☐ This report is based on a translation from the original language into the following language \_\_\_\_\_, which is the language of a translation furnished for the purposes of:
- ☐ international search (under Rules 12.3 and 23.1(b))
  - ☐ publication of the international application (under Rule 12.4)
  - ☐ international preliminary examination (under Rules 55.2 and/or 55.3)

2. With regard to the elements of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report)*:

- ☐ the international application as originally filed/furnished
- ☒ the description:
- pages 1 - 12 \_\_\_\_\_ as originally filed/furnished

pages\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_

pages\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_

- ☒ the claims:
- pages \_\_\_\_\_ as originally filed/furnished
- pages\* \_\_\_\_\_ as amended (together with any statement) under Article 19
- pages\* 1 - 5 \_\_\_\_\_ received by this Authority on 22 - 04 - 2004
- pages\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_

- ☒ the drawings:
- pages 1 - 3 \_\_\_\_\_ as originally filed/furnished
- pages\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_
- pages\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_

- ☐ a sequence listing and/or any related table(s) – see Supplemental Box Relating to Sequence Listing.

3. ☐ The amendments have resulted in the cancellation of:

- ☐ the description, pages \_\_\_\_\_
- ☐ the claims, Nos. \_\_\_\_\_
- ☐ the drawings, sheets/figs \_\_\_\_\_
- ☐ the sequence listing (*specify*): \_\_\_\_\_
- ☐ any table(s) related to the sequence listing (*specify*): \_\_\_\_\_

4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).

- ☐ the description, pages \_\_\_\_\_
- ☐ the claims, Nos. \_\_\_\_\_
- ☐ the drawings, sheets/figs \_\_\_\_\_
- ☐ the sequence listing (*specify*): \_\_\_\_\_
- ☐ any table(s) related to the sequence listing (*specify*): \_\_\_\_\_

\* If item 4 applies, some or all of those sheets may be marked "superseded."

**Box No. V** Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

## 1. Statement

|                               |        |             |     |
|-------------------------------|--------|-------------|-----|
| Novelty (N)                   | Claims | <u>1-16</u> | YES |
|                               | Claims |             | NO  |
| Inventive step (IS)           | Claims | <u>1-16</u> | YES |
|                               | Claims |             | NO  |
| Industrial applicability (IA) | Claims | <u>1-16</u> | YES |
|                               | Claims |             | NO  |

## 2. Citations and explanations (Rule 70.7)

Reference is made to the following documents:

D1: Draft Recommendation H.510- Mobility for H.323 multimedia systems and services. Geneva, February 2002

D2: WO 0146843 A2

D3: WO 0120846 A2

D4: EP 1017208 A2

Document D1 is a draft recommendation which introduces new functionality to H.323 that enables mobility in H.323 systems.

A regular H.323 system, which is regarded as state of the art, describes terminals and other entities that provide multimedia communications services over Packet Based Networks which may not provide a guaranteed Quality of Service. H.323 entities may provide real-time audio, video and/or data communications. The packet based network over which H.323 entities communicate may be a point-to-point connection, a single network segment, or an internetwork (including the internet) having multiple segments with complex topologies.

In H.323, it is known to use a packet network, such as internet, and H.323 endpoints in connection with or without gatekeepers in order to establish multimedia services between two endpoints.

The endpoints can register their IP-address with a particular gatekeeper and the gatekeeper responds with a register confirmation. A first endpoint can request a gatekeeper for addresses of other endpoints and the addresses of the other endpoints is sent to the first endpoint. If the endpoints are registered with different gatekeepers one gatekeeper could ask another gatekeeper for an endpoints address.

If a first endpoint wants to setup a session with a second

.../...

## Supplemental Box

In case the space in any of the preceding boxes is not sufficient.

Continuation of: BOX V

endpoint, a message is sent from the first endpoint via the endpoints gatekeepers to the second endpoint, the second endpoints sends an alerting and a connecting message back to the first endpoint (via the gatekeepers) and an relayed communication can be started between the endpoints.

In h.323 it is also possible to use alias-addresses and multipoint connections (where more than 2 terminals are connected at the same time). For references see H.323v4 (chapters 1, 7.2.2, 7.3.1, 8.1.2, 8.1.6), which can be found on <http://www.packetizer.com/iptel/h323/standards.html>

D2 describes a peer-to-peer computer system which maintains lists of user preferences and automatically estimates the similarity of peer users by making opportunistic use of network connections in parallel with a client-server system.

D3 and D4 are state of the art documents and will therefore not be mentioned anymore.

The object of the invention is to provide a simplified, but yet improved technique, in particular for searching and finding Voice over IP enabled mobile communication terminals.

Claims 1-16:

Through D1, which is referring to the regular H.323 standard, it is known to use H.323 for mobile terminals, the signalling procedures are known from the regular H.323 standard (see above).

However, the cited documents represent the general state of the art.

The invention defined in claims 1- 16 is not disclosed by any of these documents.

The cited prior art does not give any indication that would lead a person skilled in the art to the claimed method and arrangement for relayed services in a mobile radio frequency telecommunication system.

Therefore, the claimed invention is not obvious to a person skilled in the art.

Accordingly, the invention defined in claims 1-16 is novel and is considered to involve an inventive step. The invention is industrially applicable.

## Claims

1. An arrangement for relayed services in a mobile radio frequency telecommuni-  
cation system comprising:

5 a plurality of mobile communication terminals (1-5), from which an  
established point-to-point connection either originates or terminates,

the mobile communication terminals (1-5) operating in a mobile packet  
switched communication network, such as a third generation general packet ra-  
dio service network,

10 a global and universal interconnecting network, such as the Internet,  
at least one router (23, 24), which bi-directionally provides a connect-  
ing bridge for transmission of data between the mobile packet switched commu-  
nication network and the global and universal interconnection network,

**characterised in that**

15 at least one Internet relay mobile Voice over IP (IRMV) server (10-12)  
is provided in the a global and universal interconnecting network, in order to en-  
able communication between mobile communication terminals (1-5) so as to  
avoid the need for operator interference with the established point-to-point  
communication.

- 20 2. An arrangement for relayed services according to claim 1, **characterised in that**  
the servers (10-12) and routers (20-24) are adapted to allow voice in-  
formation to be transmitted over the data distribution channels.

- 25 3. An arrangement for relayed services according to claim 1, **characterised in that**  
the mobile communication terminals (1-5) are adapted to allow voice  
information to be transmitted using the data communication mode of the mobile  
communication terminals.

4. An arrangement for relayed services according to anyone of preceding claims,  
**characterised in that**

voice traffic is encoded in accordance with any of the ITU H.323 protocols.

5

5. An arrangement for relayed services according to anyone of preceding claims,  
**characterised in that**

provided access points for mobile communication terminals (1-5) at least partly incorporate the IRMV server functionality.

10

6. An arrangement for relayed services according to claim 5, **characterised in that**  
the IRMV server functionality at access points is carried out by means of search engine and file sharing software.

15

7. An arrangement for relayed services according to anyone of preceding claims,  
**characterised in that**

the mobile communication terminals (1-5) are WLAN or Bluetooth enabled devices.

20

8. A method in a mobile radio frequency telecommunication system for retrieval of dynamic IP-address information,  
**characterised by the steps of:**

25

registering an IP-address of a first mobile communication terminal (1-5) in an operator's address record, the registration being acknowledged by the operator of the first mobile communication terminal (1-5),

registering an IP-address of a second mobile communication terminal (1-5) in an operator's address record, the registration being acknowledged by the operator of the second mobile communication terminal (1-5),

30

the first mobile communication terminal (1-5) transmitting a request for the registered IP-address of the second mobile communication terminal (1-5), the

request being relayed from one operator's address record to the other in case of different records, and

the first mobile communication terminal (1-5) retrieving the registered IP-address of the second mobile phone (1-5) from the operator's address record.

5

9. A method in a mobile telecommunication system according to claim 8, further **characterised by the step of:**

retrieving the dynamic IP-address of at least a third communication terminal (1-5), which is to be connected to a call session between other mobile communication terminals (1-3).

10

10. A method in a mobile radio frequency telecommunication system for establishing a connection for voice data distribution, **characterised by the steps of:**

15

a first mobile communication terminal (1-5) transmitting a request for establishing a communication session with a registered IP-address of a second mobile phone (1-5),

the request being relayed from one operator's access server (10-12) to another access server (10-12) in case of different access servers,

20

the second mobile communication terminal (1-5) transmitting an acknowledgement message to the first mobile communication terminal (1-5) including acceptance message and preparation for communication session message,

25

the request being relayed from one operator's access server (10-12) to another access server (10-12) in case of different access servers, and

establishing a relayed communication session between the first and second mobile communication terminals via the access servers (10-12).

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11. A method in a mobile telecommunication system according to claim 10, further **characterised by the step of:**

continuing to establish a connection with at least a third communication terminal (1-5), which is connected to the previously connected mobile communication terminals (1-3).

- 5 12. A method in a mobile telecommunication system according to anyone of claims 8-11, further **characterised by**
- in dependence of the transmission quality of a call, establishing a new routing path onto which an established call of unsatisfactory transmission quality can be exchanged.
- 10 13. A method in a mobile telecommunication system according to anyone of claims 8-11, further **characterised by**
- registering the IP-address, the IP-address being associated with certain identifiers, such as name, telephone number, or any other unique identity number, such as a fixed allocated IP-address.
- 15 14. A method in a mobile telecommunication system according to anyone of claims 8-13, further **characterised by**
- allocating IP-addresses by means of a Internet service provider (ISP), preferably mobile ISP, or other entity managing an access point.
- 20 15. A method in a mobile telecommunication system according to anyone of claims 8-14, further **characterised by**
- searching, by means of search engine and file sharing software, for a dynamic IP-address by means of thereto associated identifiers, such as name, telephone number, or any other unique identity number, such as a fixed allocated IP-address.
- 25 16. A computer program product, at least partly integrated in the arrangement of anyone of claims 1-7, **characterised in that**
- 30

the computer program product is adapted for carrying out the method  
steps of anyone of claims 8-15.